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# MUSEUM STORIES FOR CHILDREN

*Presented by*

*The James Nelson and Anna Louise Raymond Foundation  
for Public School and Children's Lectures*

FIELD MUSEUM OF  
NATURAL HISTORY



Series XXIV, Number 1  
March 2, 1935

87654

FIELD MUSEUM OF NATURAL HISTORY

Roosevelt Road and Lake Michigan

CHICAGO

## THE AMERICAN CHAMELEON

The United States has many different kinds of lizards. Some are common, while others are seldom seen. The one best known to most boys and girls is, perhaps, the so-called "chameleon," which they purchase at the circus or at some pet store.

This small member of the reptile family is really related to the iguanas and not to the true chameleons. The latter are found in Africa, Madagascar and eastward to India and Ceylon. They are strange, razor-backed reptiles having curious bony ridges on the head, grasping feet, prehensile tails and very long tongues which are thrust out when catching the insect food. A most peculiar thing about them is their power to change color, and it was doubtless the fact that the American lizard could do the same thing that caused it to receive the name "chameleon."

Only in the southern part of our country will we find the American chameleons. They are very common in Mexico and Central America, and in Cuba where they attain a large size. In appearance they are like tiny alligators with long slender, round tails and a head covered with a hard, javelin-like shield. Like their cousins, the geckos, they have flattened pads on four of the toes of each foot. These make it possible to travel easily over erect, smooth surfaces, but the chameleons are not as rapid in flight as some of the other lizards and can be easily caught.

The bodies are covered with loose skin covered with tiny scales. On the throat of the males the skin forms a pouch known as the "fan." When excited this becomes greatly extended and projects down in the shape of a fan. At such times, it is of a brilliant red or purplish color. The cause of the rapid changes of color of the chameleons has interested the scientists for a long time.

Many people believe that these lizards always take the color of the objects upon which they are placed. This is not true. Sometimes, a chameleon of a rich, dark brown color will be found on a green twig, or a green one may be stalking prey among red leaves.

The reasons for the changes are thought to be variations in the moods of the animals, as well as differences in the temperature and amounts of light the reptile is receiving at the time observed. Deeply imbedded in the four layers of skin are bits of color or "pigments" and tiny droplets of oil. When the air becomes heated or chilled, certain

changes take place in the amounts and positions of the color. Then the chameleon wears a differently colored coat from the one he had a few minutes earlier. Brilliant sunlight and darkness will also cause the colors to change.

When asleep, or when fighting a fellow chameleon to retain some choice spot in the sunshine, the coat is always a light green with a pure white stomach. The fighting ended, the little fellow may don a coat of golden yellow or slaty gray with dots of white or turquoise blue. Sometimes, a dark, mottled band extends down the center of the back. Whatever the means by which this rapid change in color takes place, the chameleon holds a world record.

Chameleons make charming pets. If properly treated they soon take food from the fingers. Unfortunately, too many have been treated to a diet of sugar and water. These lizards do need a great deal of water, but they also need insect food. They are not able to drink from dishes, so growing plants should be kept in their cages and the plants sprinkled every day. Then they can take the moisture from the leaves and stems. A chameleon turned loose in a house will in a very short time rid it of flies, ants and cockroaches. These are the insects of which it is most fond. Its eyes appear to be small, but they are so arranged that they can roll about and see wonderfully well.

In the southern United States, these reptiles are known as "green lizards" and "fence lizards" and they are usually found sunning themselves on the top rails of old fences. Should you grasp one by the tail, you may soon find yourself holding tightly to that tail while the owner has scuttled to safety. Like many lizards, the chameleons have the power to part with their tails when necessary. Remember this in handling your pet.

All lizards are interesting to study; this one especially so.

MARGARET M. CORNELL, Guide-lecturer

Note: In Hall 18 are several cases showing lizards from various parts of the world. Notice the true chameleons in the case with the Gila monster and the horned toad.

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It is free to adults on Thursdays, Saturdays, and Sundays.

STEPHEN C. SIMMS, Director

# MUSEUM STORIES FOR CHILDREN

*Presented by*

*The James Nelson and Anna Louise Raymond Foundation  
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FIELD MUSEUM OF  
NATURAL HISTORY



Series XXIV, Number 2

March 9, 1935

FIELD MUSEUM OF NATURAL HISTORY

Roosevelt Road and Lake Michigan

CHICAGO

## NATIVE LIFE OF AUSTRALIA

Australia is the smallest and oldest of the five continents. Upon it are found some of the strangest creatures now living in the world.

Long ago, it was joined to a larger mass; then the sea invaded a part of the land, and it became the island continent. But that was so long ago, that its volcanoes are now all still, its former jagged mountains have been worn down to rounded elevations, and the coral polyps have had time to build up a great barrier reef off the northeast coast. The country is exceedingly dry except in those portions reached by the trade winds. Most of its rivers are short and many of them are lost in the sands of the dry interior, or flow into salt lakes which lie below the level of the sea. The mineral deposits are very valuable, especially the gold.

Many of the native plants and animals are survivals of the primitive forms which lived on the land before the separation. In the warm, rainy areas are found gigantic tree-ferns, bamboos, the queer shaped bottle-tree and gorgeously colored orchids. Australia is the home of the eucalyptus tree of which there are more than 150 kinds. Some of them are several hundred feet high. Lilies, which we are accustomed to see in our gardens, are found there with woody parts. Since the coming of the Europeans, many foreign plants have been introduced on the continent and wheat has become a most important crop.

Australia's animal life is unique. Most of the animals belong to the marsupial or pouched group. Besides the well-known kangaroo, there are the koalas—the original “teddy-bears,” the phalangiers, which make fernleaf nests in the shape of footballs and are very popular pets, the clumsy, tailless wombats and numerous kinds of pouched mice and moles. The dingo or wild dog is the only other large mammal. The strangest animals of all are the echidnas and duckbills or platypuses.

These two animals seem to be bridge animals between the reptiles and mammals. Both are egg-layers and both are fur-covered. The echidna is a land animal having stiff quills, no visible tail and a long, slim beak. When disturbed it tries to roll itself into a ball. It feeds chiefly upon termites which it sweeps into its mouth with its long tongue. When winter comes, the echidnas hibernate under the surface. It is then the soft-shelled egg is laid and the young hatched. The baby stays in the mother's pouch until the quills begin to appear.

The duckbills have fur like that of an otter, a tail like a beaver's, a hard beak shaped like that of a duck, and they live in burrows close

to the water. The male duckbill is the only poisonous mammal known. The poison comes from grooved spurs on the hind legs. It is much like that of snakes but is seldom used. Duckbills are very timid and hard to find, but once captured make very gentle pets. The voice is like that of a puppy. The bones have many resemblances to those of reptiles as well as to those of mammals. Australia has more poisonous snakes in proportion to its number of snakes than any other continent. Its birds are most interesting, especially the emu, the mallee mound builder and the various gorgeously colored cockatoos. The kookaburra is a large kingfisher commonly known as the "laughing jackass."

There are many native tribes still living a Stone Age existence. They plant no crops and make neither baskets nor pottery. Spears, axes, knives and scrapers are made from stone, bone and shell, while hard wood is used for shields, clubs and boomerangs. The natives are not large people, but they are noted for their endurance. Their skin is dark and the hair long and wavy. They have great respect for their ancestors, and treasure pebbles and sticks which may have belonged to them. Rain and food are thought to come because of magical ceremonies, and sickness is believed to be the result of an enemy working black magic. The children seem to lead very happy lives. They have several games. Their cat's cradle is much more complicated than ours. When a boy reaches the age of 13, he must go through a long, severe ceremony. If he passes all the rigid tests he becomes a tribesman. After that he lives with the men in a special shelter.

Since the coming of the white men, some of the primitive peoples have adopted clothing and learned to build better homes and to work in the dairy and packing plants, but at heart they are still believers in magic.

MARGARET M. CORNELL, Guide-lecturer

Note: In Hall 15 are many Australian animals; Hall 21 shows the emu and cockatoos; Hall A1 on the Ground Floor contains shields, clubs and boomerangs as well as things belonging to the witch doctors; the Hall of Races of Mankind has a family group and Hall 29 shows several of the plants of Australia.

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STEPHEN C. SIMMS, Director

# MUSEUM STORIES FOR CHILDREN

FIELD MUSEUM OF  
NATURAL HISTORY

*Presented by*

*The James Nelson and Anna Louise Raymond Foundation  
for Public School and Children's Lectures*



Series XXIV, Number 3

March 16, 1935

FIELD MUSEUM OF NATURAL HISTORY

Roosevelt Road and Lake Michigan

CHICAGO

## THE JAVANESE AND THEIR PLAYS

The island of Java has long been considered one of the beauty spots of the world. Its high, rugged mountains and its stretches of fertile, green farmland have appealed to people from all over the east. It is about the size of Illinois and has a very crowded population. The native inhabitants are brown-skinned, black-eyed and rather small. They are noted for their graceful movements, love of music and varied kinds of theatrical plays.

For its area, Java has more volcanoes than any other land. More than half of them are active. The lava has spread over the valleys and formed a rich soil covering. Thus agriculture is the chief occupation of the people. Most of the natives work in the rice fields.

So thick is the plant growth in and around the villages, that the small thatched houses of the people are usually hidden from sight. The forests are very large and numerous. Most of them contain teak-wood and the government receives large sums of money from the sale of this valuable product. As teak is one of the few woods which termites will not eat, it is most important for the making of houses and furniture.

In the forests are found the rare one-horned rhinoceroses, tigers and leopards, as well as numerous noisy monkeys. During the daytime, hundreds of large bats with wing spreads of four to five feet hang from the branches. At night, they visit the near-by plantations and gardens and destroy the fruits and vegetables. Crocodiles are common and pythons are found in the wooded regions. The water buffalo are used for work animals.

With gaily colored birds and flowers everywhere, it is not at all strange that the people are artists, delighting in beauty of form and color. They excel in making the lovely dyed cloth known as "batik," and are especially skilful in the working of metals. When a boy is fourteen, he receives his first kris—a kind of dagger on which the best workmanship is expended. Some kris are decorated with precious stones and all are highly prized. The kris is the national weapon of Java.

Java is a land of gorgeous pageants and festivals. The ancient laws and customs are sacred to the people, and the old heroes are portrayed in their dances and plays. While the people are fond of games, horse racing and cock-fights, they prefer watching performances of the wayang or native theatre. As there are seven different kinds of theatres the Javanese boys and girls are well supplied with entertainments.

The oldest and most important wayang is the shadow-play. An operator, called a "dalang," sits before a screen and works elaborately

painted and gilded figures cut from dried buffalo skin. These figures represent heroes and gods. During the play an orchestra provides suitable music to give the religious feeling needed. As these plays are sacred, offerings of food, flowers and incense are burned before each performance. Such plays may last for days. Another kind of shadow-play depicts the adventures of the famous hero Panji.

Other wayangs make use of puppets with movable arms. The head and body of the puppet are separate pieces, the head being fastened to a pointed stick which passes through the body and provides a handle for the dalang. Slender sticks are attached to the arms and the operator works these with his forefinger and thumb. Long sarongs — or skirts, hang from the waist, so no legs are used. As with the shadow-plays, the dalangs recite the story and direct the orchestras. The puppets may be used for the same plays the shadow figures illustrate, or they may relate to more modern subjects, and make use of princes and clowns and buffoons. In such performances the dalangs frequently take off certain personages in the village where the puppets are being shown.

In the true theatre, the actors may wear small, light, wooden masks painted to represent different characters or they may say their own parts without the masks. In either case, very ornate headdresses and costumes are used. Dancing is always a most important part of the show, and Javanese dances are famous. The best plays are given in the courts of the rulers, but smaller companies travel about delighting the small towns.

No matter what the form of the play, the Javanese respect the subject, honor the dalang and strive to keep the play true to the best ideals of the people.

MARGARET M. CORNELL, Guide-lecturer

Note: In Hall G on the Ground Floor is an excellent collection from Java. Notice the puppets, masks, headdresses and orchestra. The Hall of Races of Mankind shows several Javanese figures and one group showing a cockfight. In Hall 32 may be seen shadow-play figures similar to those used by the Javanese.

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STEPHEN C. SIMMS, Director

# MUSEUM STORIES FOR CHILDREN

*Presented by*

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for Public School and Children's Lectures*



Series XXIV, Number 4

March 23, 1935

FIELD MUSEUM OF NATURAL HISTORY

Roosevelt Road and Lake Michigan

CHICAGO

## ANTELOPES

The antelopes are a group of hoofed and hollow-horned animals which do not shed their horns annually as do the animals of the deer group. These most graceful of all animals are found in Asia, Europe and Africa. America has no true antelope although the Rocky Mountain Goat and the Pronghorn Antelope are very close. However, the Rocky Mountain Goat is a goat-antelope and the Pronghorn sheds the sheaths of its antlers each year and so differs from both the antelope and the deer.

Antelopes are of all sizes varying from the largest, the Eland, to the smallest, the Dik dik. Most of the antelopes are very fleet-footed; some are noted for their ability to go forty miles an hour or more. Others take enormous leaps as they bound away in fun or fright. The Impala has the most remarkable leaping powers, frequently clearing thirty-five feet in one leap. It can jump over a nine-foot fence without any apparent effort. It seems almost to float high into the air and then lightly come down again. This small animal is among the most graceful of African antelopes.

The gazelles vie with the Impala for gracefulness. They seem to fly as they bound across the plains, heads and tails erect. The gazelles are shy and depend upon running rather than fighting for protection. They are very slender creatures with dainty slim legs and soft, gentle eyes. The common gazelle of Africa is a beautiful animal with satiny smooth skin. The male has gracefully curved black horns and boundless energy. It is one of the fastest of all the antelopes. When chased by an enemy it is off like the wind; however, when far in advance the gazelle stops, turns around and jumps up into the air again and again. When the breathless pursuer comes closer the gazelle ends his triumphant dance and streaks away.

One gazelle, the Springbok, is exquisitely graceful and beautiful as it bounces up and down like a rubber ball. Sometimes it leaps into the air for fun and then again in fright. For instance, if a dog scares a Springbok the antelope remains motionless for a moment then with a start it shoots into the air, perhaps six feet, and comes down only to bounce up again. After several such startling jumps it seems to tire of the sport and is gone in an instant.

The Gerenuk is a gazelle often called the "giraffe-necked antelope" because of its unusually long neck. It is graceful when at rest but grotesque when running. It sneaks or slouches along with tail pulled down and head lowered to the body level. When danger is near and

the Gerenuk wishes to hide, it stretches itself on the ground as flat as possible. This antelope is a peculiar looking thing when feeding; it stands almost erect on its hind legs, pulls and holds the branch of a tree down with its front legs and leisurely feeds on the leaves. The long legs and neck are most useful for such habits. When alarmed the Gerenuk gives a peculiar note—a low, short buzz. Then he sneaks into the bushes, stops and peeks around curious as to what frightened him.

The Dik dik, the smallest antelope, gets its name from the softly uttered sounds “zik-zik.” This antelope stands only fifteen inches high at the shoulder. Its large, gentle eyes, pointed muzzle and tiny horns give it a rather startled expression. It is so drab colored that it blends into the color of the sandy ground and as it bounds along, its shadow is often more conspicuous than the antelope itself. The Dik diks follow the same paths faithfully every night. They do not seem to drink often and probably get most of their water from the leaves and twigs on which they feed.

The largest of all antelopes, the Eland, was named by the early Dutch settlers when they went into south Africa. They thought this antelope looked very much like the European Elk, the Dutch name for which was Eland—and so the antelope was called. The Elands are heavily built animals and resemble cattle. Their flesh is delicious and prized as a native food. The animals really would be valuable if domesticated and raised for food. They are harmless, gentle creatures and could be easily tamed. The Elands have keen sight and are wary of any unaccustomed object. When frightened they trot off jumping over each other in their hurry. They seem to enjoy this sport and continue to jump over imaginary objects and bushes as much as six feet high. They do not keep this speed very long; they slow up, stop and peer back to see what is happening. This curiosity is present to some extent in practically all of the antelopes.

MIRIAM WOOD, Guide-lecturer

Note: Many different antelopes may be seen in Halls 13 and 22. Be sure and see the antelopes in the African Water-hole group in Hall 22.

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*Presented by*

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FIELD MUSEUM OF  
NATURAL HISTORY



Series XXIV, Number 5

March 30, 1935

FIELD MUSEUM OF NATURAL HISTORY

Roosevelt Road and Lake Michigan

CHICAGO

## THE STORY OF QUARTZ

Quartz is the most common of all minerals and is found in many kinds of rock.

Sometimes it is clear and colorless, sometimes it is milky, and again it may be brilliantly colored. If it has had an opportunity to grow very slowly, adding silicon and oxygen only, then the kind known as rock crystal may have been formed. The ancients thought this was petrified ice, and our word "crystal" comes from the Greek word for ice. Occasionally, crystals of this kind of quartz are so large that balls six inches in diameter may be cut from them. Such balls were carried by Roman ladies in the summer time to help them keep cool. Similar balls are used by Japanese women today. Rock crystal is often used for lenses, art objects and mirrors.

When plant or animal material or other coloring matter is mixed with the oxygen and silicon we have such formations as amethyst, smoky quartz, cat's-eye, moss agate, agate, onyx or bloodstone. It all depends upon the kind and quantity of coloring material and the manner in which the mineral has been formed.

True quartz crystals are six-sided. The large rounded stones known as geodes are often lined with perfect crystals. Should they be reddish-purple in color and transparent, they are sometimes cut and polished as amethysts. Since early days, these have been favored for church use. St. Valentine is said to have worn one always, and during the Middle Ages soldiers wore them as good luck stones. Some of the finest amethysts known have come from the state of Maine.

Usually, quartz is the last mineral to form from a mass of matter. This explains why we once in a while find a lovely, clear quartz crystal with an entirely different kind of mineral inside. The imprisoned mineral is of various shapes and colors, or it may be dark and hazy. Such crystals furnish material for ring stones. When the enclosed mineral is hair-like and massed, it is cut and polished and sold as "cat's-eye." Should there be asbestos also it may be used for the stone called "tiger-eye." There was a time when these stones were very popular, but due to the great number now in the markets, they are less desired.

The real agates, which were highly treasured by our fathers when they played marbles, came from another kind of quartz. In this type, the materials have formed in layers so thin that a microscope is necessary to see the individual bands. Sometimes the layers are straight; again they may be wavy or rounded. The natural colors of the bands are white, black, yellow or brown. Due to a process, known for at least

one hundred years, the bands may be artificially colored. This process adds greatly to their beauty.

The Greek people first became acquainted with agates which they obtained from the Achates River in Sicily. They named the mineral from that locality. In those days, it was thought that ground agate mixed with a liquid would cure skin diseases. Among Mohammedans of today, it still is used in making medicines. Among some peoples it is worn as an ornament to bring health and wealth. We use it for knife-handles and pen-holders and for making bearings for delicate instruments used in fine mechanical work.

Another quartz used in the olden days was the sardonyx. The Persians still use it in cases of epilepsy. To the ancients it was a mineral of many uses. Some wore it, as it was reputed to have power to make the wearer a wonderful talker. In the Bible it is named as one of the stones in the foundation of the Holy City. Jasper, which is another form of quartz, was said to have been used in the making of one of the gates of that city.

Quartz has three powerful enemies: wind, frost and water. These forces are constantly working away at the mineral and reducing it to small particles. It is fortunate for us that this is so, for sand is very important in industry. The finest grades are used for glass, while other grades help the stonecutter, the foundryman, the cleaner of stone buildings, and the makers of wall plaster, paints, soaps and polishes. The standard test sand for the United States comes from Ottawa, Illinois.

MARGARET M. CORNELL, Guide-lecturer

Note: In Hall 34 are many kinds of quartz, also many wonderfully perfect crystals and geodes showing quartz crystals inside; Hall 33 shows dressed quartz; Hall 37 shows sandstone.

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Series XXIV, Number 6

April 6, 1935

FIELD MUSEUM OF NATURAL HISTORY

Roosevelt Road and Lake Michigan

CHICAGO

## THE BEETLES

The beetle family is larger than any other animal family. More than 150,000 different kinds have been collected and studied. The United States and Canada alone have over 18,000 varieties. Some are so tiny that we need a microscope to see them well; others measure several inches in length and breadth.

Like the butterflies and moths, the beetles have a four-stage life cycle. The eggs hatch into grubs or larvae. This is the most destructive form in the whole life of the beetle, especially when it remains in the grub stage for three or four years. After feeding, like wolves, upon the most valuable and beautiful of our plants, or on other insects and animal products, the larvae gradually change to pupae. It is during this quiet stage that the adult is developed.

Nature seems to have tried her best to give these children of hers a great variety of shapes and colors. Even the commonest members often wear strange headgear and gorgeous wing coats. The wings of beetles differ from those of other insects. One pair is hard and acts as a protection to the delicate flying wings folded up underneath. These wing covers are known as the "elytra" and are held out straight from the body during a flight. A close study will show them to be ornamented in several ways. They may have long grooves or pits lined with delicate scales. When the light strikes these, the rainbow colors are produced. Other beetles may have humps, spines or ridges on the elytra as well as spots and bands of color.

The heads of some beetles are so grotesque in appearance that one can easily apply the word "ogre" to them. All have jaws and lips used in chewing the food. The weevils which cause millions of dollars' worth of damage each year to our corn and cotton crops have beaks extended into real snouts; some of the dung beetles have horns as long as their bodies, and the gigantic Goliaths of Africa, with their white and yellow coats and soft, velvet spots, have horns that look like those of a stag. These beetles are the giants of the insect world, and yet they are perfectly harmless, in spite of the legs armed with spurs. To escape their enemies, many of them pretend to be dead.

One of the worst beetle enemies in Europe is the Cockchafer, which hates the heat of the day and the sunshine. To rise, this insect must inflate itself with an excess supply of air. When the French children see one wave its wings up and down, they say it is "counting its money." The cockchafers congregate in great swarms and occasionally migrate in hordes, destroying all the leaves on the hardwood trees as they go.

In our land, one of the worst enemies is the Colorado Potato Beetle. This orange-colored insect with the ten black stripes on its wing covers will turn to tomato and tobacco plants when its favorite leaves are exhausted. As a mother beetle often lays as many as 500 golden yellow eggs on the undersides of potato leaves and these are hungry grubs in a week, the damage done is enormous. Like many other kinds of beetles, these pests are well supplied with a nasty smelling, black, protective liquid which is most distasteful to birds. Thus man cannot depend upon his feathered friends to rid him of these enemies, and he has to use a spray. The grubs of the Japanese beetle, recently introduced into this country, threaten to do even more damage. They attack our lawns, while the adults feed on the leaves of trees and shrubs.

Man has discovered that certain flies and beetles will help him in his war against insect enemies. The so-called "ladybug" is one of his friends. That name is incorrect, as it is not a bug. It should be called the "Ladybird Beetle." During the Middle Ages, these beetles were sacred to young ladies, hence the name. Wherever the aphids or plant lice collect is the workshop of these interesting insects. The grubs are very active and run up and down the plants, feeding on both aphids and eggs. When they change to pupae, they hang by their tails and are easily recognized. The adults have round or oval bodies of brilliant colors with black spots. Another friend is the pugnacious little fellow known as the Tiger Beetle. It helps to keep down enemies, too.

Man has made use of parts of some beetles. The poisonous liquid of the Blister Beetle is used in making a medicine; in India, the elytra of click beetles are sewn in patterns on fans, baskets and dresses; in Guiana, wing covers decorate the feathered dance aprons and are used for children's rattles. Africa, which has the most fantastic of all beetles, provides many kinds for personal decorations. In some areas, they are worn as necklaces to bring good luck and keep away disease.

MARGARET M. CORNELL, Guide-lecturer

Note: At the west end of Hall 18 is an exhibit of insects of the dunes. Notice the beetles. Hall 9 has a case showing the use of wing covers among some of the South American Indians.

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It is free to adults on Thursdays, Saturdays and Sundays.

STEPHEN C. SIMMS, Director

# MUSEUM STORIES FOR CHILDREN

*Presented by*

*The James Nelson and Anna Louise Raymond Foundation  
for Public School and Children's Lectures*



Series XXIV, Number 7

April 13, 1935

FIELD MUSEUM OF NATURAL HISTORY

Roosevelt Road and Lake Michigan

CHICAGO

FIELD MUSEUM OF  
NATURAL HISTORY

## SOME INTERESTING MONKEYS

Monkeys attract the attention of people, both old and young. There is something appealing and laughable in the actions of a monkey whether he is silent and dignified or a chattering, grimacing imp.

There are many kinds of monkeys; some live in South and Central America but about three-fourths of them live in Africa and Asia. These are characteristic monkeys having cheek pouches or pockets into which they store an enormous amount of extra food. A monkey may have his elastic cheeks stuffed full of food and still be able to chatter. When the stored food is needed the monkey pushes his cheek with his finger and works some of that food into his mouth. The American monkeys have no such cheek pouches. However, most of the American monkeys have tails which can be used as hands; such a tail is called prehensile. The monkeys from Africa and Asia have tails that are mere ornaments; true enough they may help to balance the monkeys, as they leap through the trees, but never are they able to hold on with their tails.

The howlers, the largest American monkeys, have remarkable prehensile tails. The tip of the tail is bare on the under side and is just as good as a hand for grasping any object. The mother howler swings by her tail while she holds her baby under an arm or the baby rides on her back with its front paws clasped around her neck. The howlers travel in groups and just after sundown or before sunrise they make the jungles echo with their roars and howls. There is a special apparatus in the monkey's throat which increases the volume of his howl so that he may be heard for two miles.

The smallest monkeys live in South America. They are the marmosets, some of which are no larger than our common squirrels. Certain marmosets are elf-like creatures with tufts of long hairs on the ears. They are gentle and often mischievous monkeys.

The night monkey resembles the owl in that it sleeps in the daytime and comes out at night to play and feed. This monkey has a round face with a ruff of whitish fur and large eyes.

The Saki monkeys look as if they were wearing masks with long beards. The hair on the head has a carefully brushed appearance and the hair on the body is especially long and silky. For a South American monkey living in a warm country it seems to be heavily covered, but the hair is not particularly warm and the slightest breeze ruffles it and cools the monkey.

The largest and most spectacular of all monkeys, except the great apes, are the baboons of Africa. A baboon's face is dog-like; some are

hideous and ugly with bright red and blue callous ridges on the cheeks. The young baboons are playful and gentle but the old ones are savage and dangerous.

Among the Old World monkeys of Africa there is one particularly large group, of about eighty species, called the guenons. The name comes from a French word which means to grimace or make faces. There are more color variations among these monkeys than in any other group. They are red, brown, yellow, black, gray and mixed colors. For instance, the one called the Moustached Guenon looks like a clown; it has a greenish-brown back, violet-blue face, flesh-colored lips and a black line across the upper lip.

Another outstanding guenon monkey is the Diana. This beautiful species has a crest of pure white hair on the tip of its head and a pointed white beard on its chin. It is said the Diana monkey is very proud of its flowing white beard and at all times keeps it neat and clean; when drinking water the monkey carefully holds the beard to one side with its hands.

The peculiar Proboscis Monkeys are found only in Borneo. They are large monkeys and have especially long noses. The nose of an old male is about four or five inches long and reaches below the mouth. The monkey is able to move the proboscis-like nose up and down.

The Old World has some very beautiful monkeys such as the Snub-nosed or Golden Monkey of Tibet and China. This large monkey has golden brown hair, a comical turned-up nose and a blue-gray face.

The guerezas are considered the most beautiful of all the monkeys. The black body is partly covered with a long flowing mantle of white hair. The tail of one guereza species is like a white plume. These guerezas seem almost to dance through the trees, gracefully waving their mantles and tails like beautiful wings. Primitive African natives and civilized people are alike in admiring this attractive hair and in using it for ornaments.

MIRIAM WOOD, Guide-lecturer

Note: At the extreme west end of Hall 17 there is a habitat group of Proboscis Monkeys. All other monkey exhibits may be seen in Hall 15.

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Series XXIV, Number 8

April 20, 1935

FIELD MUSEUM OF NATURAL HISTORY

Roosevelt Road and Lake Michigan

CHICAGO

## MUSHROOMS AND THEIR COUSINS

Over one-fourth of all known plants belong to a group called fungi. These plants have no green coloring matter. Most other plants have some green color which aids them in manufacturing their own food. Since the fungi have no such green color screen they must get their food from other plants or animals either living or dead.

Fungi have no flowers or seeds; instead they have tiny powder-like spores which act like seeds in starting new plants. The visible part of the fungus, such as the mushroom, is the fruiting body which bears the spores. The rest of the fungus can be found growing like roots in the material on which the fungus lives. These tiny root-like threads work their way through the ground, plant or animal matter and sap the food and strength for the fungus. This network of threads is called the mycelium; some mycelium is so minute that it can be seen only through a microscope.

Fungi differ greatly in size. Microscopic bacteria are sometimes placed with the fungi; there are millions of bacteria and they form a most important group. The largest fungi are the bracket or shelf fungi found growing on tree trunks.

Many fungi are harmful. Those that sap the life from growing plants and trees are most certainly destructive. Certain fungi grow on foods, causing decay. Many of the bacteria attack humans and cause diseases such as pneumonia and typhoid fever. However, there are just as many beneficial fungi. Our forests would be filled with a mass of dead plant and animal matter if the fungi did not live on them and cause them to decay. During the process of decay the carbon dioxide is freed, which is absolutely necessary for growing plants. Many fungi are also edible and thus serve as a valuable food.

Probably the most familiar fungi are mushrooms. In the Chicago region alone there are over seven hundred kinds of mushrooms—some are edible and others are deadly poisonous. Every one should know the inky mushroom; it is the most common edible mushroom found growing in the parks and lawns of Chicago. The field mushroom is seldom found growing wild in this country, but is raised commercially and sold abundantly in the stores for food.

There are many poisonous mushrooms and thus care must be used in gathering any in the fields or woods. Only people who are sure of the different kinds should use wild mushrooms for food. The most deadly one is an amanita; it is often called death-cup because its

attractive, white cap rises on a stem from a loose cup buried in the soil. A skirt-like ring around the stem helps to identify this most dangerous of all mushrooms.

Mushrooms often have peculiar shapes – for instance, the giant puff balls. They look like large, white balls and are from four to twenty inches in diameter. Some weigh as much as twenty-five pounds. The giant puff ball is edible as long as it remains white on the inside. Later it turns dark, and finally the skin bursts near the top and the tiny, powder-like spores puff out like smoke leaving an empty, shrivelled sac.

The large bracket or shelf fungi commonly seen on dead as well as living trees are, of course, only the fruiting bodies with their spores. The mycelium threads are causing the decay on the inside of the tree. Such a fungus cannot start to grow on a tree unless there is a bruise or cut in the bark, thus exposing the growing cell structure. Our trees can be protected against fungus growths by sealing all cuts with paint or tar.

Some mushrooms have brilliant colors as well as odd shapes. The coral mushrooms branch like reindeer horns or reef corals and are white or brilliant yellow in color. They are edible.

Molds are fungi and will grow on almost any moist food substance. Bread often gets a fuzzy, white mold. As this mold becomes older it begins to turn black in color because the spores are ripening in their tiny sacs all over the bread surface. Thousands of spores break from each sac and float about unseen in the air. Any moist food is a suitable place to start growth, especially if it is in the dark.

Rusts, smuts and mildews grow on leaves, fruits, vegetables and grains causing a loss of food worth millions of dollars each year. However, there are fungi, such as yeast, beneficial to foods. Bread is light because of the action of the tiny yeast plants in the dough. Yeasts also make fruit juices turn into vinegar.

MIRIAM WOOD, Guide-lecturer

Note: Hall 29 contains exhibits of fungi. The inky mushroom, field mushroom, amanita, giant puff ball, shelf fungi, bacteria and several others may be seen there.

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FIELD MUSEUM OF  
NATURAL HISTORY

*Presented by*

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Series XXIV, Number 9

April 27, 1935

FIELD MUSEUM OF NATURAL HISTORY

Roosevelt Road and Lake Michigan

CHICAGO

## BIRD WEAVERS

Many birds are natural weavers in that they weave together twigs, grass, fibers and such materials to form nests. Some birds are careless and hasty in this art while others weave nests with infinite patience and skill. Birds have no implements for their weaving other than their bills and feet.

Probably the best known bird weavers in this country are the Baltimore Orioles. Their familiar nest is a hanging one six or seven inches long. The oriole usually selects an elm or willow tree for her nest; near the end of a high branch she begins her work. She industriously gathers fine grasses, plant fibers, wool, hair and bits of string. Slowly she weaves them together to form a perfect bag, which swings in the breeze.

The Orchard Oriole weaves a basket-like nest of fresh grass. The color of the nest matches the leaves so well that it is very hard to see.

There are orioles in other countries that weave remarkable nests. A Central and South American oriole, called the Oropendola, weaves a most unusual one. Some of the nests are as much as seven feet deep; such a nest is a most elaborate piece of bird architecture. New nests are constructed each year. At about the same time of year and month the female Oropendolas begin looking for suitable nest trees. The birds seem to work in groups and after one bird selects a tree for her nest several other birds begin building in the same tree. As many as fifty-seven nests have been found in one tree. The mother birds do all the work of nest building; the father birds hover about, but do no work. From early morning until late evening the mother birds are busy; they all fly together to a near-by meadow or tree and gather whatever grass or fibers they can find; then they all return to the tree together to work on the nests. It is not uncommon to see one bird stealing loose grass from another's nest, but as a rule they work peacefully together. Slowly the nest frameworks are securely woven. The mother bird hangs upside down and clings in various ways as she works the grass fibers in and out. She pays no attention to the father bird who faithfully follows her wherever she goes.

The long, narrow opening extends from the middle to the top of the nest. The actual nest room is in the very bottom of this long bag and is made of soft leaves, bark and fibers loosely placed together to keep the eggs from rolling and breaking as the wind blows the nest. The mother bird works for almost a month before the nest is completed and ready to be occupied. The father Oropendola never enters the nest.

The tiny Marsh Wren of our swamps weaves several nests before she is satisfied. Perhaps she practices on the first two or three, because they are never as complete as the final and accepted one.

Another small bird weaver is the Verdin of the southwestern United States. It is a true desert-dweller, fearing neither the heat nor the dryness. The nest for the young is usually constructed of thorny twigs, grass and weeds but lined with feathers and down interwoven with spider webs. When cold weather comes both male and female Verdins weave roosting nests. The father makes his as quickly as possible while the mother works carefully and weaves a nest as fine and exquisite as the summer one for the young birds.

The California Bush-tit sometimes uses an old nest but weaves a new layer on top. Often a nest is found constructed in three layers. The entrance is inconspicuously framed in with leaves at the top. The nest is eight or ten inches long and woven of bits of sheep's wool, leaves, oak tassels, feathers and gray moss.

There is a remarkable group of birds in Africa called the Weaver-birds or Weaver-finches. Many of these birds work together and build their nests in one large mass which may be several feet in diameter. The outside is roughly made of sticks and twigs woven together. In this mass are several holes for the separate nests. They are lined with soft grasses and fibers. Some of the nests are entered from the bottom and used as roosting places. Such a community bird house is used year after year; it is repaired and enlarged by the birds until it attains a great size.

Truly many birds are skillful weavers.

MIRIAM WOOD, Guide-lecturer

Note: In Hall 21 you may see the California Bush-tit and its nest, the Orchard and Baltimore Orioles, the Marsh Wren and Verdin. In the bird habitat groups in Hall 20 several different nests can be seen.

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